

SUBSTITUTE SPECIFICATION

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PAYLOAD LAUNCHING SYSTEM**BACKGROUND OF THE INVENTION****(1) Field of the Invention**

[0001] This invention relates to a payload launching system for accelerating a rocket, carrying or not carrying a payload, particularly but not exclusively, in order to reduce launch costs.

(2) Prior Art

[0002] In WO 0162534 there is described an acceleration system comprising a flywheel, able to rotate on an axis, and a cable, an end portion of which is adapted to releasably coupling with a load, and a remote end portion of which can be engaged with the rotating flywheel.

[0003] The flywheel is provided with a surface for receiving a portion of the cable remote from the said end portion and the surface has a curved profile the radial dimension of which increases progressively from the said axis in an arcuate direction of the said axis. After the remote end portion of the cable is engaged with the flywheel, the remote end portion of the cable remains then restrained near the centre of the flywheel and the cable winds up along the curved profile, accelerating the load.

[0004] The acceleration system provides a good solution for accelerating a heavy load with a uniform acceleration and may be used for accelerating an aircraft to take-off speed.

[0005] The acceleration system, however, describes no practical way to accelerate a rocket that may be attached to the cable,